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RADIO Propaganda Report

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SOVIET "ORBITAL ROCKETS"

A review of Soviet propaganda treatment of the concept of orbital rockets from the 1950's to date, with an appendix reproducing statements on the subject

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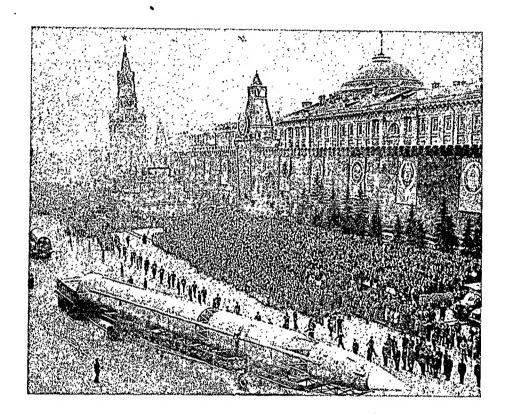
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PROPAGANDA REPORT
3 AUGUST 1965

SOVIET "ORBITAL ROCKETS"



"Gigantic orbital rockets--related to the rocket carriers which confidently put into space the space ships in the series Vostok and Voskhod. For these rockets there is no range limit, and the possible might of their nuclear warheads is fantastic."

--WINGS OF THE MOTHERLAND, No. 7
(Signed to the press 20 June 1965)

ROPAGANDA REPORT

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SOVIET "ORBITAL ROCKETS"

In his speech to military graduates on 3 July 1965, Brezhnev asserted that the USSR possessed a sufficient quantity of intercontinental. and "orbital" rockets (orbitalnyye rakety) to rout any aggressor. Brezhnev's reference to "orbital" rockets as such was the first by a top Soviet leader. Claims to Soviet possession of "orbital" rockets had previously appeared in Soviet propaganda, however, at the time of the V-E Day parade on 9 May 1965 and sporadically thereafter in the Soviet press. These references revealed little or nothing about the general characteristics of this weapon beyond the assertion of a V-E Day parade commentator that the "orbital" rocket is "related" to the carrier rockets which placed Voskhod II into orbit, that it can reach any point on the earth from any direction, and that it is "practically" invulnerable to antimissile defense. Three days after Brezhnev's speech, a more complete definition of the term "orbital" rocket was provided in a Radio Moscow commentary by Mitin broadcast in English to South Asia. Citing Brezhnev's speech, Mitin declared:

These rockets are shot into a terrestrial orbit from where they are capable of hitting any target on earth when needed. Distinct from other types of rockets, they have practically no flight limit and are capable of carrying super-powerful nuclear charges.

In the mass propaganda, at least, Mitin was thus the first to define the capabilities of a Soviet "orbital rocket" in any detail. But as far back as the late 50°s, Soviet propaganda had begun to discuss the concept of the weapon described by Mitin without using the term "orbital." There were more discussions of this kind in late 1963, in 1964, and early this year, still almost always avoiding use of the term. It was in October 1963 that the United Nations passed the resolution proscribing the orbiting (but not development or stockpiling) of weapons in outer space—an event widely hailed in Soviet propaganda as contributing, along with the partial nuclear test—ban treaty, to relaxation of the international atmosphere.

1958: Discussion of Orbital Weapon Concept

Soviet discussion of outer space for military purposes normally takes the form of critical reviews of Western writings and statements on the subject. Thus the relationship between the USSR's own



PROCEANDA REPORT 3 AUGUST 1965

.. ..

- 2 -

artificial satellite program and the development of "cosmic" weapons systems ascribed to the West is left implicit. One of the first discussions of the feasibility of an orbital weapons system was provided in an article by Professor A. Rybkin published in RED STAR on 22 March 1958. In describing the possible applications of space research for military weapons development, Rybkin acknowledged the scientific feasibility of arming space satellites with "atomic and hydrogen" weapons:

Artificial earth satellites as well as rockets can be launched into space. Shot to the necessary altitude, they can remain in space almost indefinitely. If the plane of a satellite's orbit forms a sufficiently wide angle to the plane of the earth's equator, the satellite will pass over the entire earth's surface.... As the foreign press has stated, satellites can carry atomic and hydrogen weapons.

Statements acknowledging the feasibility of an orbital bombardment system continued to appear in the early 60°s. In a RED STAR article on 29 November 1961, two prominent military theorists, Zheltikov and Larionov, cited U.S. military thinking in this sphere and quoted one American journal to the effect that

in the very near future--if not already--mighty hydrogen bombs will almost certainly be installed in earth satellites. As a result, space ships or stations will be able to launch rockets against objects on earth.

Khrushchev later that year made the first--oblique--acknowledgment by a top Soviet leader of the implications of the USSR's manned space program for an orbital bombardment system. Speaking in Moscow at a trade unions congress on 9 December 1961, Khrushchev hinted at the feasibility of a Soviet orbital weapons system as evidenced by recent Soviet space feats:

If we could send up Yuriy Gagarin and German Titov, we could, of course, replace Yuriy Gagarin and German Titov by other freight and land where we would like to land it.

March 1962: The "Global Rocket"

The claim to Soviet possession of a so-called "global rocket" (globalnaya raketa) was introduced by Khrushchev in a preelection speech on 22 March 1962. While the announcement as well as the

CONFIDENTIAL

ROPAGANDA REPORT

- 3 -

name of this super-weapon seemed calculated to achieve the greatest psychological effect, little was revealed about the precise nature of the weapon, either by Khrushchev or subsequently by military spokesmen, beyond assertions about its unlimited range and trajectory--"the new global rocket can fly around the world in any direction and deal a blow at any set target"--and its "invulnerability" or "practical invulnerability" to "modern" antimissile defenses.

None of the references to the "global rocket" from Khrushchev's introduction of the term in 1962 to date has used language comparable to that applied to the concept of an orbital weapon. Soviet propagandists have occasionally referred in the same breath to an "intercontinental, or global, rocket" conveying the idea that the "global" rocket is an improved version of the earlier ICBM. One discussion of global rockets and Soviet rocket capability generally did suggest that Soviet global rockets were capable of achieving at least a fractional orbit: Thus Marshal Krylov wrote in IZVESTIYA on 17 November 1963 that the unique feature of the USSR's "strategic rockets" was their accuracy and ability to place their "trajectories within parameters which make nuclear rocket attack both unexpected and inevitable."

January 1963: Hints at Ability to Develop Orbital Weapons

Statements suggesting that the USSR possessed the scientific capabilities to develop an orbital weapons system first appeared in Soviet propaganda in January 1963. An article by Major General G. Shatunov published on 27 January 1963 in SOVETSKIY PATRIOT contained an explicit claim that the USSR possessed the scientific capability to launch rocket weapons from artificial satellites:

It has now become possible to launch a rocket from an artificial earth satellite on command from earth at any time and at any point in the satellite's trajectory.

This assertion was repeated by Marshal Biryuzov less than a month later in identical language. In a radio interview on 21 February 1963 marking Soviet Army Day, Biryuzov said: "It has now become possible to launch, at a command from earth, rockets from a satellite, and this at any desirable time, at any point in the satellite trajectory." It may be noted that Shatunov's and Biryuzov's claims were both made in the months following the withdrawal of Soviet missiles from Cuba, when the USSR would have had good reason to want to bolster the image of its unhindered strategic capabilities at a time of obvious weakness.



PROTANDA REPORT 3 AU-ST 1965

- 4 -

Another specific claim regarding Soviet capabilities to develop an orbital weapons system, in the vein of the Shatunov and Biryuzov statements, appeared on 3 April 1963. In a RED STAR article, prominent military commentator Colonel V. Glazov cited Biryuzov's statement and discussed the advantages of an orbital weapons system over conventional ballistic missiles. Ridiculing British disparagement "of the so-called 'orbital bomb,'" Glazov's remarks seemed contrived to give the impression that an orbital bombardment system had been developed by the Soviet Union and was already operational.

Articles on U.S. Orbital Rockets in 1964 and Early 1965

In 1964, Soviet propaganda continued to evince concern with problems of space warfare primarily through the medium of military critiques of Western literature on the subject. One such critique published in RED STAR on 15 April 1964, focusing on U.S. space programs, contained an unusually detailed discussion of "orbital rockets" allegedly being developed in the United States.

During the first part of 1965, a two-part article in RED STAR by Glazov appraised Western scientific experimentation in the uses of space for military purposes. In the second installment, on 27 January, Glazov presented a lengthy discussion of U.S. military plans to develop an orbital weapons system consisting of "several hundreds of nuclear bombs which are in orbit and ready, upon command from earth, to deliver a strike against preselected targets," Unlike Glazov's 1963 article, this one did not suggest that the USSR possessed or was developing an orbital weapons system of its own, and no available Soviet statement hinted that such a system had been developed until the claims to Soviet possession of orbital rockets were advanced during the V-E Day observance in May.

ROPAGANDA REPORT

- 5 -

APPENDIX

A compilation of available Soviet statements tracing the development of the concept of an orbital weapons system.

Prof. A Rybkin in RED STAR, 22 March 1958:

Artificial earth satellites as well as rockets can be launched into space. Shot to the necessary altitude, they can remain in space almost indefinitely. If the plane of a satellite's orbit forms a sufficiently wide angle to the plane of the earth's equator, the satellite will pass over the entire earth's surface. This makes it possible to utilize it for military purposes, as representatives of military circles in capitalist countries have enthusiastically pointed out more than once. The satellite can be used for observing territories of various countries by means of a telescope combined with television equipment.

As the foreign press has stated, satellites can carry atomic and hydrogen weapons. Considering the difficulty in intercepting and destroying a satellite in space, it must be kept in mind that it could be a dangerous weapon in the hands of the aggressor. The Soviet Government's proposal which poses banning the utilization of space for military purposes also includes conditions for international control which would preclude the possibility of artificial earth satellites being used for aggressive purposes.

Col. Zheltikov and Lt. Col. Larionov in RED STAR, 29 November 1961:

In connection with the fact that long-range rockets for a considerable part of their course pass through space, bourgeois military circles are striving to picture space as a scene of future military operations.

American militarists stubbornly search for possibilities to utilize earth satellites and other installations as strategic means of attack and espionage. Blabbing out the secret thoughts of U.S. military circles, one American journal noted in 1960: "In the very near future—if not already—mighty hydrogen bombs will almost



PRO JANDA REPORT 3 AUGUST 1965

- 6 -

certainly be installed in earth satellites. As a result, space ships or stations will be able to launch rockets against objects on earth."

Khrushchev speech to World Federation of Trade Unions Congress in Moscows 9 December 1961:

... There is now not a single plot of land where one could say that this land is safe, because now the means of delivering thermonuclear weapons are so powerful that they can be delivered to any spot on the globe. If we could send up Yuriy Gagarin and German Titov, we could, of course, replace Yuriy Gagarin and German Titov by other freight and land where we would like to land it. [TASS version: A devastating retaliatory blow will be dealt against any aggressor, because the means of delivering thermonuclear weapons are now so perfect that they can be delivered to any point on the globe. If we could bring the spaceships of Yuriy Gagarin and German Titov to land at a prearranged spot, we could, of course, send up other "payloads" and "land" them wherever we wanted.]

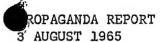
Lt. Col. Larionov in RED STAR, 18 March 1962:

The broadly conceived American plans for the military utilization of cosmic space envisage the creation of new systems of armament for conducting independent offensive and defensive operations in space and of space systems for dealing nuclear blows against land targets, after 1965. This stage envisages the improvement of existing, and the production of new, types of ballistic rockets which will make it possible to launch into orbit around the earth sputnik-ships readily recognizable as possible carriers of thermonuclear charges. It is planned to place aboard such ships a crew of two to three people, and optical, television, and photographic equipment. It is not considered possible to create experimental models of space flight devices for destroying land targets with nuclear charges carried by missiles of the "spaceto-earth" class before 1966.

Excerpt from the book MILITARY STRATEGY, edited by Marshal Sokolovskiy, signed to the press 24 May 1962:

Our achievements in space research serve peace, scientific progress, and the benefit of all mankind on our planet.





... 7 ·

Soviet space flights are an expression of the unstinting efforts of the entire Soviet people to achieve lasting peace on earth.

However, the Soviet Union cannot disregard the fact that American imperialists subordinate space research to military purposes and that they plan to use space to accomplish their aggressive purpose—a surprise nuclear attack on the Soviet Union and the other socialist countries.

Consequently, Soviet military strategy acknowledges the need to study the use of space and space vehicles to reinforce the defense of the socialist countries. The need to ensure the security of our motherland, the interests of the whole socialist commonwealth, and the desirability of preserving peace on earth demand this. It would be a mistake to allow the imperialist camp to gain any superiority in this area. The imperialists must be opposed with more effective weapons and methods of using space for defense. Only in this way can they be forced to refrain from the use of space for a destructive, devastating war.

Lt. Col. Leontyev and Maj. V. Polyanskiy in RED STAR, 4 August 1962:

The Pentagon strategists assert that a future war will be waged in space. They demand that the creation of cosmic armaments systems and the training of the necessary personnel should be accelerated and that the strategy and tactics of war in cosmic space should be worked out without delay. ...

At the Pentagon's urgent request, the U.S. Government is now spending 5 billion dollars a year on the implementation of "cosmic projects" and intends to spend two or three times as much. The United States is already using cosmic space for military purposes: for their nuclear arms tests and in such fields as intelligence (espionage satellites), communication, and navigation.

But it turns out that even this does not suffice. In the Pentagon's underground premises the sinister plans for the creation of a "cosmic arms" system for the murder of hundreds of millions of people are being worked out. The former chief of staff of the U.S. air force and now military columnist of NEWSWEEK, General White, thinks



PROGANDA REPORT 3 AUST 1965

- 8 -

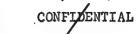
that "death rays" are particularly suitable for military action in space. "In short," this General and provocateur reports, "we will probably have to examine what the Soviet Union has launched into space; and perhaps we will have to shoot down this equipment."

He is seconded by the former Hitlerite and now American rocket specialist, Dornberger. He boasts that he proposed to the Pentagon as early as in 1948 that the earth be surrounded by hundreds of artifical satellites in the form of nuclear bombs. "The orbits of these bombs must be laid over Russia. I see no reason to prevent us from doing so.... In case of war we will not have to change these orbits. I think that it would be possible to launch these bombs with sufficient precision."

It seems that the people from whom the American generals are taking their "strategic ideas" are Hitlerite murderers whose bloodthirsty ideas have now been officially approved by the Pentagon. The SATURDAY EVENING POST recently reported that the Pentagon is now working on ways to destroy "inimical cities and goals" with the help of cosmic devices carrying gigantic bombs which could be exploded over a given region at a great height and would thus burn "a considerable part of an entire continent." ...

Spaceships manned by people will fight, while people on earth quietly wait the outcome of this duel—this is the idyllic picture drawn by PARADE magazine. "The winner in space," it remarks wistfully, "will obviously be able to dictate his will on earth, and therefore it would make no sense to destroy anything on it." But if the freedom-loving peoples will not submit to another people's will, what then? Then the American atomic warmongers would start launching bombs from space to the earth. This is how they intend to help mankind "survive" in a future war!

The Soviet people think that space must be conquered for peaceful purposes, in the interest of science, and for the welfare of man. But the transoceanic strategists are so enthusiastic about their raving ideas that they have forgotten at least two very important facts. The first is that cosmic space is not U.S. territory, but belongs to all mankind, and no one will be allowed to behave there like gangsters and pirates. Second, at present



ROPAGANDA REPORT

9 •

military superiority is not on the U.S. side. The Soviet Union will see to it that this position is also preserved in the future. Those who explode bombs in space should think twice about whether they will be able to return to earth.

Major General Baryshev on anticosmic defense in RED STAR, 2 September 1962:

U.S. military circles are paying great attention to creating cosmic means of attack. One of the most zealous advocates of preparing a cosmic war, the former Hitlerite rocketry specialist, Dornberg, who is now working in the United States, stated openly in the pages of the journal AVIATION WEEK: "We must have an offensive system of weapons in the cosmos ... [RED STAR ellipsis] above all we need a bombing system consisting of hundreds of nuclear bombs revolving in orbits around the earth in all directions."

This is not simply the cannibalistic raving of a maniac who has gone off his rocker. His writings reflect the real thoughts of the American militarists, who have worked out a long-term program for the utilization of the cosmos for military purposes, Even now, on the basis of this program, reconnaissance satellites, satellites for detecting the launching of ballistic rockets, cosmic systems for the navigation of rocket-carrying atomic submarines and strategic bombers, meteorological and communication satellites, and a whole number of other things have been created. For the future it is planned to put into operation maneuverable rocket planes (raketoplan), orbiting satellites carrying rocket-nuclear weapons, and systems for striking at ground targets.

General Kurochkin review of the book MILITARY STRATEGY in RED STAR, 22 September 1962:

In the chapter dealing with opinions on the methods of warfare, the authors also examine such an important problem as the use of outer space for military purposes. They cite a number of facts showing that American imperialists have entered the path of direct use of the cosmos for carrying out their aggressive aims directed against the socialist countries. The American press openly speaks about "outer space being the strategic theater of tomorrow."



PROGRAMDA REPORT 3 AUGUST 1965

- 10 -

The Soviet people are occupied in peaceful exploitation of the cosmos. The flights of our cosmonauts Yu. Gagarin, G. Titov, A. Nikolayev, and P. Popovich, which amazed the whole world, as is known, did not pursue any military aims. But it is quite obvious that if the imperialists continue to search for ways of using outer space for military purposes, then the interests of insuring the security of the Soviet state will require the necessary measures by our side as well. In this connection the authors draw attention to the fact that in Soviet military strategic thought the problem of using outer space for forestalling the aggressive aims of the imperialists should be taken into account.

Malinovskiy pamphlet "Vigilantly Stand Guard Over the Peace," 28 November 1962:

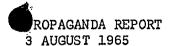
Soviet military doctrine tops strategy and determines the bases of armed conflict, views on the nature of war under the conditions that have developed, the preparation of the country for war and the use of the armed forces in defense of the state, the most modern methods of carrying on an armed conflict by means of all the forces and facilities of the state in all theaters and areas, including land, sea, and space.

Maj. Gen. G. Shatunov in SOVETSKIY PATRIOT, 27 January 1963:

The investigations of space by means of rockets and spaceships which have been carried out by our country testify to the achievements in the development of Soviet technology, its high quality, reliability, and accuracy. It has now become possible to launch a rocket from an artificial earth satellite on command from earth at any time and at any point in the satellite's trajectory.

Marshal of the Soviet Union S. Biryuzov interview broadcast by Moscow radio 21 February 1963:

The successes in the development of Soviet arms and their high quality, reliability, and precision are testified to also by the rockets used in the exploration of the cosmos. It has now become possible to launch, at a command from earth, rockets from a satellite, and this at any desirable time, at any point in the satellite trajectory.



- 11 -

Col. Terentyev in RED STAR, 12 March 1963, as reported by TASS:

Terentyev further stresses that the military leaders of the United States feel that in a future war, the domination of space will be as important as domination of the air is now. For these purposes they plan to use various space vehicles and space weapons systems, both manned and pilotless. Most effective in the opinion of American military leaders will be a combination of these.

According to Col. Terentyev, up to now the United States does not have manned military spaceships. However, its space engineers are busy developing and modernizing some aircraft which are being fitted with additional rocket engines. "All the work in the conquest of space conducted in the United States," Col. Terentyev writes in conclusion, "pursues military aims—to achieve definite advantages for the eventual war they are preparing against the USSR and the other socialist countries, to achieve world domination."

Col. V. Glazov in RED STAR, 3 April 1963:

The Soviet Union's remarkable achievements in exploring space provoke justified admiration throughout the world. These explorations which became possible owing to the rapid progress of rocket technology in the USSR are of tremendous scientific importance and are striking evidence of the titanic forces of our socialist motherland and the unlimited possibilities for further strengthening its defense capability.

Speaking at the meeting devoted to the 45th anniversary of the Soviet Armed Forces, Marshal of the Soviet Union R. Ya Malinovskiy, Minister of Defense of the USSR, stressed that the rockets and warheads served well the cause of the reliable defense of our motherland. In a radio speech, Marshal of the Soviet Union S.S. Biryuzov announced that we possess the capability to launch, upon orders from the earth, a rocket from a satellite at any point of its movement in orbit.

The new principle of launching space rockets from the orbits of artificial earth satellites makes it possible to select and calculate in advance the optimal point for a launch from an intermediate orbit, to reduce the requirements for the power of a multistage carrier rocket which



PREGANDA REPORT 3 AUGUST 1965

- 12 -

is to place the space rocket together with the station in a satellite orbit, and to considerably increase the weight of the station itself. This is strikingly evidenced by the successful flight of the Mars I automatic interplanetary station....

The striking achievements of the USSR in space call forth anxiety among Western militarists. They feverishly search for some "arguments" which would enable them, to any extent, to minimize and cast doubt on the new Soviet achievements in space in general and the launching of rockets from a satellite in particular.

The statements carried by the British SUNDAY TIMES and SUNDAY TELEGRAPH are quite remarkable in this respect. These papers, mind you, declared simultaneously, as if by command, that the "Soviet orbital bomb"—this is how they call the satellite which ensures the start of the rocket—"is a less attractive weapon than the conventional bal—listic rocket." Where do they see its unattractiveness? If they can see it in the fact that it is impossible to hide from the resistless, colossal force of such a bomb's strike, we will not argue against it. Neither would we challenge the assertion that to create it, a much higher level of development in many spheres of science and technology is needed than that achieved in the United States and England.

In the great number of projects a prominent place has been assigned to a so-called orbital bombardment system consisting of a great number of heavy satellites, up to three tons, with nuclear charges which must move in low and high orbits and which are to have different life spans. But even the U.S. specialists themselves understand that they are not capable of creating such a system in the near future. So far they have been barely able to lift into orbit a satellite weighing two tons with their most powerful rocket. With dejection and envy they follow the flights of the more than six-ton Soviet giant space satellites.

It is no secret that the rockets for military purposes and the spaceships launched for peaceful purposes are based on the same scientific achievements. This must be well known also to U.S. military circles. Obviously, it is also no secret that space rockets require more powerful power units since they have to lift a considerably

ROPAGANDA REPORT

- 13 -

greater weight to a higher altitude. Therefore, it hardly makes sense to build one's illusions by frightening the USSR with threats from space. The force of our retaliatory strike is more than sufficient to burn the aggressors in fire in the very first hours of the war, regardless of where they try to start the aggression, on land, sea, or in space.

Col. Aleksandrov and Maj. Polyanskiy in RED STAR, 5 July 1963:

Even a spy satellite is not the ultimate in the dreams of the military leaders in the United States. It is known. for example, that the Pentagon is working on a project of a pilotable winged rocket plane, the "Dynasoar," which was named "X-20." This rocket plane is called a "gliding orbital bomber." The "Saint" project is intended to create a pilotless satellite "to identify and destroy the satellites of the enemy." Finally. the main thing which the U.S. military leadership is dreaming of is to create systems of artificial bomber satellites, armed with nuclear bombs and traveling along orbits with a great apogee, satellites that will possess a long life. As LIFE recently wrote, General D. Ferguson declared in one of the committees of the U.S. House of Representatives that an artificial earth satellite that was armed with nuclear warheads would be capable of hitting targets twice as fast as any intercontinental ballistic rocket. ... It is quite characteristic that the more successes the Soviet Union gains in mastering space for peaceful purposes, the more persistently does the Pentagon strive to make the expanses of the universe a future theater of military operations.

The Soviet people cannot but draw the necessary conclusion from the dangerous actions undertaken by the United States in cosmic space. Our people will not permit anyone to catch them unaware anywhere.

Col. Malishkin in RED STAR, 8 August 1963:

At present the United States is working on several satellite bomber projects, these satellites being manned or unmanned, carrying hydrogen bombs. The "flying bomb system" project calls for launching in peacetime a large number of heavy satellites, weighing up to three tons, with nuclear warheads. The orbits for these





PR GANDA REPORT 3 AUGUST 1965

- 14 -

satellites are selected so that during each orbit the satellite is for 18 minutes in a position relative to a given target which would enable it to strike the target on command from earth. According to another project, given the name "Sped," it is planned to launch satellites in orbit only after earth radar stations have detected enemy target signals. In case of false alarm the satellites are to be returned to earth and destroyed in the sea.

A number of American specialists have expressed the opinion that even images on the screens of radar stations caused by the falling of meteorites or other natural phenomena may serve as cause for the launching of hundreds of satellites within a few minutes. This in turn may serve as cause for the beginning of a nuclear war. The Americans have just cause for such fears. Everyone is aware of the case when an armada of American SAC bombers went up due to a signal reflected from a flock of geese near the Soviet border.

Alongside the study of possible uses of unmanned weapons an extensive program of research is being carried out for the effectiveness of manned space vehicles for bombing. On contract with the U.S. air force, the firm of Boeing is studying different variants of a strategic orbital bombing system. This system assumes the use of bomber satellites in low and high orbits. In addition, the possibility is being studied of building an orbital rocket plane capable of taking off from airfields designed for B52 bombers, capable of landing at such airfields after one or more orbits. American military leaders are not concealing their crafty plans for the use of satellite bombers -- these hundreds of nuclear bombs circling the earth in all directions, particularly "over Soviet air space." The journal MISSILES AND ROCKETS wrote that "in peacetime it will be necessary to camouflage the orbital launching of such satellites, making detection and destruction of satellite bombers difficult. We must use rubber or plastic coverings to fool radar stations." The journal openly states that "satellite bombers could serve as international blackmail." Indeed, there is no limit to the treachery of the most bald-faced saber-rattlers of American imperialism!

Already American spy satellites are streaking through space, equipped with intelligence apparatus for photographing various installations on the surface of the earth.





OPAGANDA REPORT 3 AUGUST 1965

- 15 -

In addition to the development of new spy satellites and further improvements in their equipment, the American air force has started developing identification satellites. Their job is to determine the orbits and purpose of other satellites. These will be inspector satellites, satellite gendarmes. According to the "Saint" project, a radar set and computer with memory device will be installed in such inspector satellites for determining the orbit of a new satellite. The memory device would hold data on the speed and orbital figures on the inspector satellite. as well as those of all known satellites in orbit. By comparing the orbital parameters it would be possible to determine the appearance of a new satellite. If this takes place, the "Saint" would send a report to earth. approach the satellite and determine its purpose with the aid of equipment on board.

In addition to the radar equipment, the inspector satellites will contain television equipment for transmitting an image of the satellites being identified to earth. In order to determine whether the satellite carries a nuclear weapon, a radiation indicator would be mounted on the "space inspector." Other units will make it possible to determine the mass of the satellite, which will help in drawing a conclusion as to its military purpose. The inspector satellite will be put into orbit somewhat higher and ahead of the satellite being identified. Moving at a great rate of speed in orbit, the "Saint" would "intercept" the target and then, reducing its velocity with rocket engines, would draw close to it. The initial distance for target interception would be about 80 kilometers. In order to identify a satellite the "Saint" would have to move to a distance of 15-30 meters from it. These figures show that the launch parameters of an inspector satellite must be extremely accurate, which cannot be said about launches now being made in the United States.

The U.S. space program calls for a speed-up in the development of antisatellite satellites, capable of destroying military satellites and rockets. Planning is being conducted on these destroyer satellites in two basic areas: against rockets and against satellites. Destruction of rockets is to be carried out during the active sector of a rocket flight. According to the "Bambi" project, the first launchings of such antimissile satellites will begin in 1965. About 3,000 destroyer satellites are



PROGANDA REPORT 3 AUGUST 1965

- 16 -

to be put into orbits up to 320 kilometers high. The antisatellite satellite will be equipped with six antimissile missiles with nuclear warheads and homing equipment. It will contain an infrared unit for detecting and tracking missiles during the powered portion of their trajectory, a computer for determining the missile flight trajectory figures and feeding the necessary data into the antimissile missile launch control sytem.

In order to destroy space vehicles, improved inspector satellites are to be used, which will have the job not only of determining the military nature of satellites but also of destroying them. Therefore, in addition to radar and infrared equipment for detection and homing, television and other equipment for transmitting the inspection results to earth tracking stations, the "space inspectors" will contain satellite destruction weapons.

Maj. Gen. Baryshev in RED STAR, 13 November 1963:

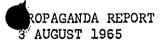
Thus, U.S. reactionary forces, for the sake of camouflage, are speaking only of a defense system which "would consist of hundreds of artificial earth satellites, all armed with small missiles with infrared guidance systems to destroy ballistic missiles." But these people are concerned about different things. "Should we select an offensive system for defense," they state, "a space bombing system established in times of peace would be the most efficient."

Eng. Col. B. Trofimov in RED STAR, 15 April 1964:

There are forces in the world--the forces of imperialism--which, in the interests of aggression, are striving to utilize such remarkable achievements of mankind as orbital flights. For a long time there has been a special administration at the U.S. Department of Defense directing work for the conquest of space for military aims. NASA, too, has been working on this concern. U.S. militarist circles which see in the military use of space a path to world dominance are assigning tremendous funds for such work.

According to the admission of the American press, military space research includes an extensive range of





- 17 -

problems. A prominent place among them is assigned to orbital rockets. In the opinion of a number of American military experts their creation means a further step in the development of strategic rocket weapons and will have an essential influence on the means of waging war. The German rocket specialist Dornberger, who is working in the United States, for example proposed to put into orbit, with the help of already existing rockets, hundreds of nuclear bombs over the USSR and to keep them there in readiness for dealing nuclear blows. "With the help of such a space bomber system," he stressed, "we can transfer the field of military operations from earth to space."

As is known, owing to the efforts of the peace-loving states an international agreement was reached which now bans putting objects carrying weapons of mass destruction into orbit around the earth. This has to a certain degree stopped the inhuman plans of the militarists. At the same time, however, this agreement, as apparent from numerous data, has not touched the essence of their plans and intentions. As before a program for creating offensive space weapons by 1970, including also the working out of orbital rockets, is in operation in the United States.

The foreign press noted that the basic idea of the research conducted along this line was to create means of attack which, revolving in orbits around the earth, could at a given moment descend on prearranged targets. It is assumed that such missiles would combine the flexibility of piloted bombers with the one-time action of long-range ballistic rockets. It is believed that in this way it would be possible to overcome such shortcomings of ballistic rockets as the inability to maneuver them after they have been launched on their trajectory and to return them to earth after a mistaken launching.

What scientific and technical principles are included in the project of the orbital weapons? It was noted in the foreign press that the development of such means was done on the basis of the improvement of conventional ballistic rockets. Making use of the successes in the unbridled development of rocket technology and radioelectronic means of space control, the specialists are





PROGANDA REPORT 3 AGUST 1965

- 18 -

trying to add to them new trajectories of movement—the trajectory of a body which is in free flight and capable of switching from orbit to orbit while still under the influence of the earth's gravity.

To acquaint ourselves with the problems arising here we will look at the difference between the trajectories of ballistic and orbital rockets. We will also see under which conditions the last stage of strategic rockets can be transformed into an orbital space weapon. ...

The foreign specialists now regard the increase of the initial speed to the point where the trajectory of the flight becomes circular at the starting point for creating orbital rocket weapons that depend on the creation of mobile launching pads at a great altitude.

As was noted in the foreign press, in addition to a system of equipment on earth, the orbital rocket weapons must include a great number of three-ton satellites in the last stage of the rockets. They must move around the earth in circular orbits. It is assumed that every such orbital rocket system must insure the attack on prearranged targets within 20 minutes after receiving the order by radio. It was also noted that in addition to the warhead every orbital rocket must carry boosters aboard for braking [tormoznoy dvigate], a system of orientation, automatic guidance apparatuses, electric power sources, means of technical control, and other equipment.

The foreign specialists assume that in connection with the complexity of the orbital rockets' design their reliability will be considerably lower than the reliability of ground-to-ground ICBM's.

According to their calculations, for destroying one target it will be necessary to have a considerably greater number of rockets in orbit than would be required to destroy the target with conventional ballistic rockets. But, in the opinion of some specialists, this is justified in view of the effects of antirocket defense means since orbital weapons would be less vulnerable. Moreover, no unanimous opinion exists on this matter. Proof of this is the working out of projects in the United States for so-called screening systems for

ROPAGANDA REPORT

- 19 -

intercepting beyond the dense strata of the atmosphere any space flight apparatus, including reconnaissance satellites and orbital rockets.

The foreign press notes that the contemporary standard of rocket technology makes it possible to insure the launching of orbital rockets to the necessary altitude. As a number of authors have stressed, one of the problems in this connection consists of insuring the necessary precision in bringing orbital rockets to the target. In their opinion, the difficulty lies in the fact that the possibility of failure grows in proportion to the rocket's speed as it approaches the first cosmic speed. Basically it is determined by the precision of measuring the rocket's speed at the moment the rocket propulsion system's last stage is cut off.

The foreign specialists regard as the next step in creating orbital rockets the appearance of rockets flying at greater altitudes, having a longer life span, and being invulnerable to antimissile missiles. Specifically, as noted by the press, studies are being made of the use of combat space rockets moving along an elongated elliptical trajectory and having, as a result, a considerable range of time to destroy the target. It is believed that such a rocket would penetrate very deeply into space and that the attacking side would thus have more time to make a final decision on the destruction of the target.

As is known, contemporary ballistic rockets cannot be reaimed after being launched on a false alarm. As far as the orbital rockets are concerned, the duration of their flight can, depending on the initial speed, be measured in hours or even day-and-night periods. According to the given program, they can deviate from their normal trajectory and can at any time be utilized for dealing blows. It is noted in the press that the approach of such rockets to the target they are to attack must take place under a small angle at speeds exceeding eight kilometers per second, which makes the use of antimissile defense means considerably more difficult.

It is understandable that the mere utilization of scientific achievements in calculating and controlling





PROGANDA REPORT 3 AUGUST 1965

- 20 -

the trajectories of space flight apparatuses flying close to earth does not yield all the fundamentals for creating orbital rocket weapons.

The representatives of U.S. military circles note that its working out is unthinkable without solving such problems as the creation of more powerful rocket propulsion systems and high-precision guidance systems and a considerable increase in the reliability of rocket weapons at their disposal. And for solving these tasks the American imperialists are drawing upon more new resources, inflating the space armament program and placing the newest achievements of science and technology in the service of their aggressive plans.

Owing to this the Soviet Union vigilantly follows the machinations of the imperialists in order to strengthen its defense capacity and the security of the entire socialist camp.

Col, C. Glazov in RED STAR, 27 January 1965:

Space weapons can be conditionally divided, according to purpose, into space-to-earth bombing systems, space-to-space fighter systems, and combined systems. One must immediately note that at the present time they all exist mainly in the form of projects of which there are untold numbers in the United States.

At the same time the U.S. press rather frequently carries statements on the possibility of launching into space bomb-satellites with nuclear charges, whose "dropping" on a ground target can be carried out according to the same principle as, for example, the landing of cosmonauts or of containers of the Discoverer and Samos satellites.

The idea of creating a bombing system consisting of several hundreds of nuclear bombs which are in orbit and ready, upon command from the earth, to deliver a strike against preselected targets emerged among U.S. military circles a long time ago. Practical research on the possibilities of working out such systems dates back to the early 60's. Several projects are known which differ from each other only in the altitude of the orbit of the satellitebombs. Recently, the press reported data on pilotless

CONFLOENTIAL



ROPAGANDA REPORT

- 21 -

satellites which are eventually planned to be launched in low orbits. They are to have nuclear charges of enormous yield on board. According to the U.S. press, the Discoverer satellites are the prototypes for these satellites. It is no accident that their total number in space is a secret, as instructed by the U.S. Defense Department.

As Dornberger, a U.S. specialist on space weapons, has pointed out, piloted satellites of the Mercury type weighing some two tons are also destined for operations in low-altitude orbits. As is known, four flights with people on board were carried out with these satellites from 1962 to 1963. The spaceship of the Gemini type, intended for orbital flights of a duration of up to two weeks, can probably be used for the same purpose. It is not without purpose that the New York TIMES reported that the Gemini program is also pursuing a number of military goals.

Thus, heavy artifical earth satellites and inhabited spaceships can become the foundation of a bombing system or of space weapons of the space-to-earth class.

An editorial in a Swiss journal...lists a number of sufficiently candid "strategic conclusions" in favor of the creation of satellite-bombers as carriers of nuclear weapons. It notes, for example, that bombs moving along an orbit can have a greater psychological effect on the enemy than rockets on underground launch pads or on rocket-carrying submarines. In this connection, it is further noted, the enemy would be forced to begin the destruction of the space forces before those on the ground.

Space weapons of the space-to-space class are included, abroad, among the so-called defense systems. William Coughlin, the chief editor of the journal MISSILES AND ROCKETS, particularly insists on this. This is done in order to somehow veil the mad plans of the Pentagon for the spreading of military preparations into space. With the aim of justifying plans for developing such weapons, references are made to an allegedly existing "potential threat" against the United States by other states. In fact, however, these weapons are intended to destroy satellites and space ships in orbit.



PR GANDA REPORT 3 AUGUST 1965

- 22 -

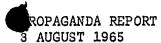
It is true that so far, space-to-space fighter systems are only reviewed as possible in principle. Their incorporation in armament is not expected until the end of the current decade or the beginning of the next. The press states that in order to create them, it is necessary to implement a number of very difficult tasks connected with the recognition of space targets, their interception, and immediate destruction. In the United States, the problem of maneuvering interceptor ships in space is considered a particularly difficult problem.

Various means are proposed for the destruction of enemy space apparatuses. For this purpose, the U.S. specialists see great prospects in the use of quantum light ray generators. It is considered possible to burn the hull of a ship or satellite almost instantly and thus put it out of operation.

It is also believed that a possible method of destruction is to force enemy spaceships into dense strata of the atmosphere and even to the ground. For this purpose, it is proposed to create piloted fighter apparatuses, part of whose crews could temporarily leave their ship, approach the enemy ship, and attach braking rocket engines to it. U.S. specialists have allegedly already worked out special suits and apparatuses with a system of jet nozzles that ensure the free movement of a pilot in space.

Remote plans include the development of combined systems, that is, bombing and fighter space systems of the space-to-earth and space-to-space classes. One may include here the project of the Dynasoar X-20 rocket plane which is widely publicized in the pages of the U.S. press from the military and technical viewpoint.

According to the intentions of the designers of Dynasoar, it was planned as a hypersonic intercontinental bomber capable of dropping bombs or guided rockets while gliding down an altitude of 30 to 60 kilometers. It was also assigned the missions of conducting global reconnais—sance and of detecting and destroying various flight apparatuses in space. By its design it was to be a piloted glider launched into space with the help of rockets and capable of flying in orbit, deviating from it, entering dense strata of the atmosphere, and performing landings



- 23 -

on conventional airfields. The development of the X-20 projects, assigned by the U.S. Air Force, began at the end of 1957. The difficulties facing the firms working on the implementation of the projects are indicated by the fact that in 1963, the Dynasoar program received an additional allocation of 100 million dollars in addition to funds allocated earlier which almost equal that.

At the present time, the further development of the rocket plane has been stopped. In the opinion of foreign observers this decision does not mean that the United States has abandoned the idea of creating a rocket plane or air and space aircraft. They point out that the funds earmarked for Dynasoar projects have been switched by the U.S. Defense Department to creating a military piloted space apparatus on the basis of the Gemini ship because this has greater prospects.

Not stopping there, however, the United States is also undertaking steps in a another direction. Thus President Johnson declared in the fall of 1964 that the United States is creating a system for destroying satellites with the help of rockets. The press explained recently that these systems are to utilize the first U.S. Thor ballistic missile and the Nike-Zeus antirocket. It is reported that intercepts of their own satellites were carried out at altitudes up to "several hundred miles." The Department of Defense issued the following comment on these events: "Both systems intercepted satellites in space, and the missile passed so close to the satellites that the latter would have been within the range of the devastating effect of the warhead." Thus the Secretary [of Defense] added, in effect, that there was no physical interception of the satellite; it was only computed that it could have been destroyed.

As before, the U.S. military journals continue to pay great attention to the idea of creating in the United States inhabited space platforms or orbital space stations as the foundation of space forces.

There are descriptions of the designs of such platforms and stations, and their weight and dimensions and the number of the crew members are listed. There are a great variety of data, but they all have the same essence.





PR GANDA REPORT 3 AGUST 1965

- 24 -

The United States wants a space ship which would enable it simultaneously to execute the most diverse military tasks in space and—the main thing—to achieve superiority in space. However, the abundance of projects does nothing except to uncover and confirm once more the true strivings of the imperialists.

Recently, U.S. plans have begun to pay more attention to man in space. In the U.S., they have begun to regard him as a basic "element" in various space systems, mechanically comparing him with a light and perfect computer, possessing varied sources of information and memory. Since man is capable of "self-programming," he is considered most suitable for use in military space weapons systems. In connection with this fact, intensive research is conducted into systems for sustaining life in space....

A general picture of the status of space armament would be incomplete if one failed to say something of the carrier rockets which place flight apparatus of various types in orbit. The space rocket systems can by their degree of readiness be divided into three basic groups; those existing, those in the stage of being developed, and those in the stage of study and planning.

The rocket systems of the first group include, for example, the Agena rocket system.... The second group includes the Saturn and Saturn 1-B rocket systems.... The Titan-3 is a multipurpose and three-stage rocket system. It is utilized for various military purposes, and in particular for the launching of the Gemini-B spaceship. The third group includes the Saturn-5 rocket system. It has been estimated that this rocket will be capable of placing a payload of some 100 tons into orbit at an altitude of over 500 kilometers, to provide a payload of approximately 43 tons with the second cosmic velocity, and to give a payload of up to 30 tons the speed required for interplanetary flight. The first tests are planned for 1966. The third group includes also the Nova rocket system. It has a somewhat better performance that the Saturn rocket. It will not be ready for use until after 1970.

The Rover rocket system is also projected. It will be the first rocket with a nuclear engine. At present underground tests of reactors which are prototypes of a nuclear engine are being performed. So far, no flight tests are planned.





ROPAGANDA REPORT

- 25 -

The U.S. press notes that the existing U.S. rockets are not distinguished by being particularly powerful. The power of the engines of the Soviet rocket which placed the Vostok into orbit was no less than 20 million horsepower. As far as the planned U.S. systems are concerned, the foreign specialists admit that their development will require a long period of time.

As can be seen from what was said above, U.S. militarist circles are paying great attention to developing space armament. According to their plans, this armament, in coordination with intercontinental bal-. listic rockets and the strategic air force, is to be used at the very onset of the war for implementing major strategic tasks. With the aid of space means of support and control, the U.S. command plans to carefully study and select targets for nuclear strikes. and to bring its armed forces in a centralized manner into combat readiness to insure surprise attack. U.S. strategists hope to insure for themselves strategic initiative and superiority in the military field by the delivery of mighty and surprise nuclear blows with the help of space weapons. But they will never attain what they hope for. This is guaranteed by the continuous concern of the CPSU and of all our people for strengthening the country's defense and for raising the combat might of our glorious armed forces.

Moscow radio announcer describing V-E Day parade, Red Square, 9 May 1965:

Three-stage intercontinental missiles (raketa) are passing by. Their design is improved. They are very reliable in use. Their servicing (obsluzhivaniye) is fully automated. The parade of awesome battle might is being crowned by the gigantic orbital missiles (orbitalnyye rakety). They are akin to the carrier rockets which confidently put into space our remarkable spaceships like the Voskhod II. For these missiles there is no limit to range. The main property of missiles of this class is their ability to hit enemy objectives literally from any direction, which makes them virtually (prakticheski) invulnerable to antimissile defense means (sredstvo). Today the parade is demonstrating once again the high level of Soviet missile construction. We have the most varied missiles with nuclear and other warheads. This insures the reliability

PROFINANDA REPORT 3 AUGUST 1965

- 26 -

of the solution of combat tasks for annihilating any aggressor if he should dare to unleash war.

Caption under TASS photo showing a three-stage rocket displayed in Red Square parade, printed in SOVIET LATVIA, 10 May 1965:

Moscow, Red Square, 9 May 1965. The military parade marking the 20th anniversary of the victory of the Soviet people in the great patriotic war. In the photo: Gigantic orbital rockets. They are releated to the rocket carriers which confidently put into space the cosmic ships in the series "Vostok" and "Voskhod." For these missiles there is no range limit, and the possible might of their nuclear warheads is fantastic. The main characteristic of missiles of this class is their ability to hit enemy objectives literally from any direction. This makes them practically invulnerable to antimissile defense means.

Maj. Gen. A.M. Cherednichenko in LIFE ABROAD No. 23, June 1965:

At the parade on victory day, we demonstrated orbital rockets capable of carrying charges of any size, intercontinental solid-fuel rockets which can be maintained at the launching pads in constant high readiness, new naval rockets with a range of over 1,000 kilometers, and new rockets for antirocket defense. They remind the American strategists, who regard their Minuteman and Polaris rockets as "absolute weapons" and who boast of the imaginary "superiority" of the American nuclear forces, that in the case of a nuclear war unleashed by them nothing can save the aggressor from a devastating retaliatory blow. This is inexorable reality.

OGONEK No. 25, 20 June 1965:

Strategic rocket troops are the base of the combat might of the Soviet Union's armed forces. They possess medium-range ballistic, intercontinental, and orbital rockets.

Brezhnev speech at reception for military graduates, 3 July 1965:

It is hardly necessary to quote here concrete data about the quantity of intercontinental and orbital rockets at the disposal of the Soviet Union. I can say one thing: We have enough of them, quite enough, to make short work



b1

CONFIDENTIAL

ROPAGANDA REPORT

- 27 -

once and for all of any aggressor or any grouping of aggressors. We are pleased with our rockets. Their great reliability and high degree of preparedness for immediate launching are the result of their high degree of technical perfection.

S. Mitin commentary broadcast by Radio Moscow in English to South Asia, 6 July 1965:

The Soviet armed forces are important weapons for preserving present-day world peace. They are equipped with the most modern weapons, including intercontinental and orbital rockets, supersonic long-range planes, atomic submarines and rocket-carrying surface ships. Their orbital rockets are an especially strong weapon. These rockets are shot into a terrestrial orbit from where they are capable of hitting any target on earth when needed. Distinct from other types of rockets, they have practically no flight limit and are capable of carrying superpowerful nuclear charges.

Unattributed report on front page of RED STAR, 10 July 1965:

Our rocket troops have a sufficient number of intercontinental, orbital, and other rockets to wipe any aggressor off the face of the earth.

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